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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/779,874	02/18/2004	Jeong Dae Seo	K-0610	9489

34610	7590	10/22/2007
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EXAMINER	
THOMPSON, CAMIE S	

ART UNIT	PAPER NUMBER
1794	

MAIL DATE	DELIVERY MODE
10/22/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/779,874	Applicant(s) SEO ET AL.	
	Examiner Camie S. Thompson	Art Unit 1774	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Amendment filed July 31, 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14, 16, 17, 19, 22, 24 and 25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14, 16-17, 19, 22, 24-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's amendment and accompanying remarks filed July 31, 2007 are acknowledged.
2. Examiner acknowledges amended claims 1, 8 and 22.
3. Examiner acknowledges cancelled claim 23.
4. The rejection of claims 1-14, 17 and 19-25 under 35 U.S.C. 103(a) as being unpatentable over Tutt et al., U.S. Pre Grant Publication 2006/0084347 is overcome by applicant's amendment.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 3, 5, 8, 10, 12, 14, 17 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 2002-260858.

The Japanese reference discloses a light-emitting device comprising a substrate; a first and second electrode with an emission layer disposed therebetween (see paragraph 0024).

Additionally, the reference discloses that the emission layer is formed of a first, second and third emission layer and the three emission layers are coplanar (see Figure 2). The abstract of the

Japanese reference discloses a hole blocking layer disposed between the hole transport layer and

Art Unit: 1774

emission layer as per instant claims 3, 10 and 17. Also, the abstract of the reference discloses that an electron transporting layer is present between the emission layer and the cathode. The reference claims disclose that the red emission layer comprises a phosphorescent material and the green emission layer comprises a fluorescent substance as per instant claims 5 and 12.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 4, 11 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2002-260858.

The Japanese reference discloses a light-emitting device comprising a substrate; a first and second electrode with an emission layer disposed therebetween (see paragraph 0024).

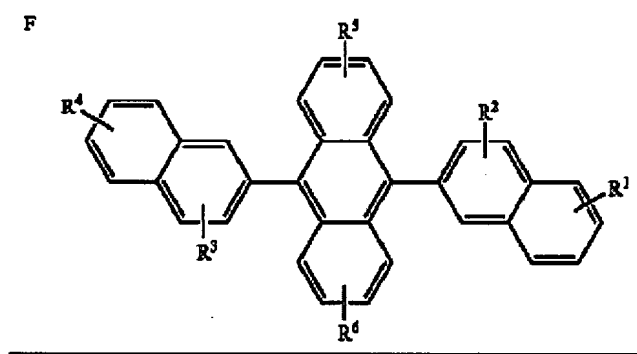
Additionally, the reference discloses that the emission layer is formed of a first, second and third emission layer and the three emission layers are coplanar (see Figure 2). The abstract of the Japanese reference discloses a hole blocking layer disposed between the hole transport layer and emission layer as per instant claims 3, 10 and 17. Also, the abstract of the reference discloses that an electron transporting layer is present between the emission layer and the cathode. The Japanese reference does not specifically disclose that the first layer is a green emission layer; the second emission layer is a red emission layer and the third emission layer is a blue emission layer. Figure 2 of the Japanese reference discloses that the first emission layer is blue; second

Art Unit: 1774

emission layer is green and the third emission layer is red. However, the reference does disclose that the emissive colors are green, red and blue. Therefore, it would have been obvious to one of ordinary skill in the art to have the first emissive layer as green emission; the second emissive layer as red emission and the third emissive layer as blue emission in order to obtain a full-color OLED device having a desired array of colored pixels.

9. Claims 2, 6-7, 9, 13, 16, 19 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tutt et al., U.S. Pre Grant Publication 2006/0084347 in view of JP 2002-260858.

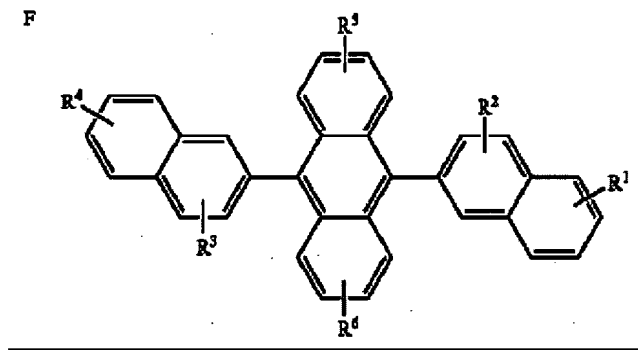
Tutt discloses a method for forming a color organic light-emitting device. Figure 3 of the reference describes an electrode formed on a substrate with an emission region comprising three emission areas wherein a hole blocking layer is formed on the emission layer (see also paragraphs 0124-0125). Also, the reference discloses that the hole blocking material can comprise an anthracene compound such as



Paragraph 0115 of the reference discloses that an electron-injecting layer may be present as well. Paragraph 0076 of the reference discloses that the three emission areas are green, red and blue. The reference also discloses that the first emission layer can comprise an electron transporting

Art Unit: 1774

material or a hole transporting material and a dopant such as a fluorescent dye (see paragraphs 0076 and 0107). Paragraph 0079 of the reference discloses the use of metal complexes of 8-hydroxyquinoline for host materials suitable for green and red light emission. Paragraph 0093 of the reference discloses the used of anthracene derivatives such as



that can be use for blue. Reference claim 9 discloses that the first emissive layer produces a first colored light; the second emissive layer produces a second colored light and the third emissive layer produces a third colored light. Reference claim 9 does not provide for the specific colors for each particular emissive layer. However, the reference does disclose that the emissive colors are green, red and blue. Additionally, Tutt discloses that the emissive layer each have a different color emission (see paragraph 0009-0016). Therefore, it would have been obvious to one of ordinary skill in the art to have the first emissive layer as green emission; the second emissive layer as red emission and the third emissive layer as blue emission in order to obtain a full-color OLED device having a desired array of colored pixels. Tutt does not disclose that the three emission layer are coplanar. The Japanese reference discloses a light emitting device comprising a substrate; two electrodes and an emission layer disposed therebetween wherein the emission layer comprises three emission layer, which are coplanar. The emission layers being coplanar affects the luminescence of the device by allowing the hole blocking layer to block hole for all

Art Unit: 1774

three layers. Therefore, it would have been obvious to one of ordinary skill in the art to have the three emission layers in the Tutt reference be coplanar in order to have higher luminescence.

Response to Arguments

10. Applicant's arguments with respect to the present claims have been considered but are moot in view of the new ground(s) of rejection.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Camie S. Thompson whose telephone number is (571) 272-1530. The examiner can normally be reached on Monday through Friday from 7:30 am to 4:00 pm. If attempts to

Art Unit: 1774

reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano, can be reached at (571) 272-1398. The fax phone number for the Group is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Milton I. Cano', is positioned above the printed name.

MILTON I. CANO
SUPERVISORY PATENT EXAMINER